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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/519,946	12/29/2004	Lee D Miller	540-545	5081
23117	7590	11/24/2006	EXAMINER	
NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203			EL SHAMMAA, MARY A	
			ART UNIT	PAPER NUMBER
			2883	

DATE MAILED: 11/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/519,946	MILLER ET AL.
	Examiner Mary A. El-Shammaa	Art Unit 2883

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 23 August 2006.
- 2a) This action is FINAL.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-8 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 29 December 2004 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ .                                    |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ .  | 6) <input type="checkbox"/> Other: _____ .                        |

## **DETAILED ACTION**

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-8 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Byron (US 4,633,428) in view of Barenburg et al. (US 2003/0026515 A1).

Regarding claim 1, Byron discloses in Fig. 4a a signal processing system comprising at least two independent processing channels, a plurality of optical fibers (24, 25, 26), and couplers (28) interconnecting the other ends of said optical fibers in parallel (shown in Fig. 4a) whereby transmission by said optical fibers is coupled together and then directed into each of the independent processing channels (32, 33, 34) (col. 3, line 61 through col. 4, line 48). Byron does not disclose the fibers receiving and transmitting electromagnetic radiation. Barenburg discloses optical fibers receiving and transmitting electromagnetic radiation (page 10, paragraph [0086]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the fibers receive and transmit electromagnetic radiation. The motivation to use

electromagnetic radiation is to transmit large quantities of information efficiently and quickly over long distances.

Regarding claim 2, Byron discloses at least one of the independent processing channels includes a processing board with an output to a signal detector (col. 3, line 61 through col. 4, line 48).

Regarding claim 3, Byron discloses at least one of the processing boards includes signal processing components selected from the group comprising electrical and optical signal processing components (col. 3, line 61 through col. 4, line 48).

Regarding claim 4, Barenburg discloses at least one of the independent processing channels is arranged to transmit the electromagnetic radiation in sequence to a signal detector input (page 10, paragraph [0086]).

Regarding claim 5, Barenburg discloses another of the independent processing channels is arranged to transmit the electronic radiation in sequence to another signal detector input, and said independent processing channels incorporate different optical delays to minimize any range/position ambiguity (page 10, paragraphs [0086-0089]).

Regarding claim 6, Barenburg discloses one of the independent processing channels is arranged to transmit electromagnetic radiation in sequence to a signal detector unit, and another of the independent processing channels is arranged to transmit the electromagnetic radiation to a processing board configured to assess the range and depth of target (page 10, paragraphs [0086-0089]).

Regarding claim 7, Byron discloses two of the independent processing channels contain different signal detectors (col. 3, line 61 through col. 4, line 48).

Regarding claim 8, Byron discloses at least one of the independent processing channels is arranged to feed signals into at least one other independent processing channel (col. 3, line 61 through col. 4, line 48).

*Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mary A. El-Shammaa whose telephone number is 571.272.2469. The examiner can normally be reached on M-F (8:30am-5:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on 571.272.2415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

*MAE*  
November 13, 2006

  
Frank G. Font  
Supervisory Patent Examiner  
Technology Center 2800